

UNITED STATES NAVAL OBSERVATORY
CIRCULAR NO. 26

U. S. Naval Observatory, Washington 25, D. C.

January 29, 1951

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS

NOVEMBER 1950

By Lucy T. Day

These results are based upon measurements made at the Naval Observatory on plates secured either there or at the Mt. Wilson Observatory. The symbols used for the entries in the successive columns are as follows:

U.T., the epoch of observation in Universal Time.

No., the identifying number of the group assigned by Mt. Wilson.

Δl , the heliographic difference in longitude from the central meridian, measured positive to the west.

φ , the heliographic latitude, measured positive to the north.

ρ , the heliocentric angular distance from the line joining the centers of the Earth and Sun.

A , the true area of the umbra plus penumbra, expressed in millionths of the visible hemisphere.

s , the number of spots.

An asterisk means that no Mt. Wilson number was assigned. Plates secured at the Naval Observatory are indicated by N, and those at Mt. Wilson by W. The plate quality, which follows, is indicated by:

1, Poor; 2, Fair; 3, Good; 4, Very Good; 5, Excellent.

The following five quantities are listed successively at the end of each day, and give for that day:

1. The total number of groups, g .
2. The longitude of the central meridian, L_0 .
3. The latitude of the center of the disc, B_0 .
4. The total value of A .
5. The total value of s .

The mean daily area and the mean relative sunspot number, $r=10g+s$ are given at the end of the month.

These results are a continuation of those published in the *Monthly Weather Review* from February 1, 1927 to December 31, 1947.

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U.T.	No.	Δl	φ	ρ	A	s	U.T.	No.	Δl	φ	ρ	A	s
1.659	10523	-29	+12	31	24	9		10528	-60	-15	63	242	1
N-3	10523	-23	+11	24	194	4		10529	-59	+12	59	12	3
	10523	-23	+9	24	24	4		10527	-55	+3	55	48	2
	10526	-12	-7	17	97	10		10527	-51	+4	51	97	4
	10526	-10	-6	15	48	7		10530	-6	+13	11	145	1
	10526	-8	-5	13	48	4		10530	-4	+13	9	48	5
	10526	-6	-5	11	36	3		10530	-2	+11	7	73	1
	10520	+5	-5	10	24	8		10523	+29	+11	31	73	2
	10519	+17	-11	23	145	1		10523	+31	+9	32	12	1
	10524	+80	+29	80	24	3		10526	+40	-6	43	24	4
	(5)	(142)	(+4)		664	53		10526	+50	-4	51	145	1
								10519	+70	-11	70	97	1
2.651	10523	-15	+12	17	24	4		(7)	(89)	(+4)		1161	28
N-3	10523	-12	+12	14	97	3							
	10523	-11	+11	13	48	1	6.649	10528	-50	-13	53	61	4
	10523	-10	+9	11	48	5	N-3	10528	-48	-12	51	24	2
	10526	0	-7	11	145	10		10528	-48	-15	52	194	1
	10526	+5	-6	10	97	13		10527	-42	+3	42	24	5
	10526	+7	-6	13	24	2		10527	-38	+4	38	61	2
	10520	+16	-5	18	12	1		10530	+6	+13	10	267	4
	10519	+30	-11	33	145	1		10530	+9	+12	12	24	5
	(4)	(129)	(+4)		640	40		10530	+12	+11	14	291	1
3.638	10528	-85	-12	85	24	1		10523	+42	+12	43	36	3
N-3	10523	+1	+11	7	145	2		10526	+63	-4	63	145	1
	10526	+13	-7	17	97	3		10519	+84	-11	84	97	1
	10526	+15	-5	18	24	10	(6)	(76)	(+4)		1224	29	
	10526	+19	-5	22	36	5							
	10526	+20	-5	22	145	1	7.647	10528	-37	-13	42	12	2
	10519	+43	-11	45	145	1	N-3	10528	-35	-12	38	145	10
	(4)	(116)	(+4)		616	23		10528	-35	-15	40	194	1
4.670	10528	-80	-13	80	97	2		10527	-29	+3	29	12	2
N-3	10528	-78	-11	78	97	3		10527	-27	+4	27	24	2
	10528	-75	-14	76	291	1		10530	+20	+13	22	267	6
	10529	-72	+12	72	48	4		10530	+23	+12	24	48	10
	10527	-70	+5	70	12	3		10530	+26	+11	27	339	1
	10527	-70	+3	70	24	4		10523	+55	+12	56	12	1
	10527	-66	+4	66	170	4		10526	+77	-4	77	145	1
	10523	+15	+13	17	73	4	(5)	(63)	(+4)		1198	36	
	10523	+16	+12	18	36	3							
	10526	+26	-6	27	36	7	8.797	10531	-88	+15	88	145	2
	10526	+28	-5	31	12	4	N-3	10528	-28	-12	32	12	7
	10526	+35	-4	36	121	3		10528	-19	-15	26	194	1
	10519	+52	-10	54	12	1		10528	-19	-14	25	145	26
	10519	+56	-11	57	121	2		10527	-13	+3	13	24	10
	(6)	(102)	(+4)		1150	45		(*)	-11	-16	23	12	5
5.676	10528	-65	-15	67	48	1		10530	+31	+15	33	12	6
N-3	10528	-63	-12	65	97	1		10530	+34	+13	35	291	20
								10530	+41	+11	42	364	5
								10523	+68	+13	68	12	3
							(6)	(48)	(+4)		1211	85	

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U.T.	No.	Δl	φ	ρ	A	s	U.T.	No.	Δl	φ	ρ	A	s
		$^{\circ}$	$^{\circ}$	$^{\circ}$					$^{\circ}$	$^{\circ}$	$^{\circ}$		
9.649	10531	-75	+15	75	242	1		10532	-13	+16	17	145	8
N-3	10528	-15	-11	21	24	5		10532	-10	+14	15	24	8
	10528	-8	-15	22	194	1		10531	-7	+12	12	48	7
	10528	-8	-14	21	121	15		10531	-5	+13	11	339	1
	(*)	+12	+2	12	12	1		(*)	+3	+17	15	36	2
	10530	+45	+13	46	339	16		10528	+59	-15	62	194	1
	10530	+51	+11	52	388	1							
	(4)	(37)	(+4)		1320	40		(5)	(331)	(+3)		1089	32
10.644	10532	-70	+15	70	97	2	15.651	10537	-31	+16	33	12	2
N-3	10532	-64	+15	65	73	5	N-3	10537	-25	+17	29	6	1
	10531	-60	+14	61	218	1		10533	-15	-8	18	24	3
	10528	+7	-15	19	218	1		10535	-15	-12	21	12	4
	10530	+59	+13	60	485	6		10532	-5	+16	15	242	1
	10530	+64	+11	65	533	1		10532	-2	+15	12	73	6
	(4)	(24)	(+3)		1624	16		10532	+1	+16	13	194	8
11.633	10533	-68	-7	69	121	2		10531	+7	+14	14	48	1
W-4	10532	-58	+15	60	48	1		10531	+9	+13	13	291	1
	10532	-56	+15	57	48	6		10536	+20	+17	25	12	1
	10532	-56	+16	57	73	1		10528	+72	-15	74	145	1
	10532	-50	+16	51	48	9							
	10531	-47	+14	48	291	1		(7)	(317)	(+3)		1059	29
	10528	+20	-15	26	194	1	16.739	10537	-18	+17	23	121	18
	10528	+17	-16	26	24	1	N-3	10533	-2	-8	11	24	2
	10534	+32	-13	36	12	3		10532	+9	+16	16	291	7
	10530	+73	+13	73	267	10		10532	+14	+17	20	97	13
	10530	+78	+11	78	533	1		10532	+16	+17	21	218	6
	(6)	(10)	(+3)		1659	36		10531	+22	+12	23	6	1
12.626	10533	-55	-7	56	61	1		10531	+23	+13	24	291	1
W-3	10535	-55	-11	57	16	3		(4)	(303)	(+3)		1048	48
	10532	-46	+16	47	24	5	17.636	10537	-5	+16	14	48	7
	10532	-44	+16	45	267	10	N-2	10537	-3	+16	13	48	4
	10532	-40	+17	42	97	8		10532	+21	+16	24	242	2
	10531	-32	+14	33	242	1		10532	+28	+17	32	267	7
	10528	+32	-15	36	194	1		10531	+34	+13	35	24	1
	10530	+85	+13	85	242	1		10531	+36	+14	37	291	1
	(6)	(357)	(+3)		1143	30		10536	+44	+19	45	48	1
13.637	10533	-42	-7	43	61	1		(4)	(291)	(+3)		968	23
N-3	10532	-32	+17	34	267	1	18.617	10537	+7	+16	16	48	5
	10532	-28	+17	31	145	3	N-2	10537	+10	+17	17	24	4
	10532	-23	+14	25	48	5		10537	+12	+17	19	48	2
	10531	-18	+14	22	242	1		10532	+34	+14	35	242	4
	10528	+45	-15	48	194	1		10532	+40	+16	42	194	4
	(4)	(344)	(+3)		957	12		10531	+49	+14	50	291	1
14.651	10533	-29	-7	31	36	1		10536	+58	+19	60	36	1
N-3	10532	-19	+15	22	267	4		(4)	(278)	(+2)		883	21
							20.723	(*)	-16	+15	20	24	3
							W-2	10537	+36	+17	38	48	24

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U.T.	No.	Δl	φ	ρ	A	s	U.T.	No.	Δl	φ	ρ	A	s
		$^{\circ}$	$^{\circ}$	$^{\circ}$					$^{\circ}$	$^{\circ}$	$^{\circ}$		
	10537	+39	+17	42	12	6		10543	-58	-22	62	24	3
	10532	+64	+14	65	145	1		10540	-45	-17	48	267	12
	10532	+66	+15	67	12	2		10541	-38	-6	39	121	4
	10532	+69	+17	70	145	6		10541	-34	-6	35	97	7
	10532	+71	+16	71	24	2		10539	-19	+19	25	24	3
	10531	+79	+14	79	267	3		10539	-9	+19	20	97	1
	(3)	(251)	(+2)		677	47		(5)	(159)	(+1)		1018	33
21.637	10537	+48	+17	50	36	9	28.642	10542	-63	+12	63	315	1
W-2	10532	+78	+14	78	97	1	N-3	10543	-49	-24	53	109	1
	10532	+81	+16	81	97	2		10543	-45	-22	50	48	10
	(2)	(239)	(+2)		230	12		10540	-32	-17	37	121	9
22.782	10539	-76	+18	77	145	1		10540	-29	-17	33	97	5
N-3	10537	+63	+18	65	12	1		10540	-26	-17	32	73	2
	10537	+65	+18	67	24	2		10541	-25	-7	26	145	2
	(2)	(224)	(+2)		181	4		10541	-20	-6	23	97	7
23.675	10539	-67	+18	69	73	4		10539	+4	+19	18	73	1
N-2	10539	-63	+18	65	121	1		(5)	(146)	(+1)		1078	38
	10537	+78	+18	79	24	1	29.692	10542	-49	+12	50	315	1
	(2)	(212)	(+2)		218	6	N-3	10543	-35	-24	42	97	2
24.667	10539	-55	+19	57	36	2		10543	-30	-22	37	48	6
N-2	10539	-49	+18	51	121	1		10543	-28	-22	35	145	1
	(1)	(199)	(+2)		157	3		10540	-20	-17	27	109	1
25.707	10540	-73	-17	75	24	8		10540	-16	-17	23	145	7
W-3	10539	-42	+20	44	36	7		10540	-12	-17	22	145	4
	10539	-35	+20	38	73	1		10541	-12	-7	15	145	2
	(2)	(185)	(+2)		133	16		10541	-6	-6	10	61	7
26.634	10540	-59	-17	61	109	1		10539	+18	+19	25	61	1
N-3	10541	-50	-7	51	36	5		(5)	(132)	(+1)		1771	32
	10539	-31	+19	35	61	2	30.740	10542	-35	+12	36	339	1
	10539	-25	+19	30	73	2	N-2	10543	-22	-24	33	97	1
	10539	-23	+19	27	97	1		10543	-13	-22	27	121	4
	(3)	(173)	(+1)		376	11		10540	-7	-16	18	97	3
27.680	10542	-76	+12	76	291	1		10540	-2	-18	19	61	2
N-2	10543	-61	-23	65	97	2		10540	+1	-17	18	97	3
								10541	-1	-7	8	12	1
								10541	+2	-7	8	145	1
								10541	+7	-5	10	12	2
								10541	+9	-4	11	48	2
								10544	+16	-7	17	36	2
								10539	+30	+20	35	73	1
								(6)	(119)	(+1)		1138	23

Mean for 30 days, $A=900$, $r=73.1$